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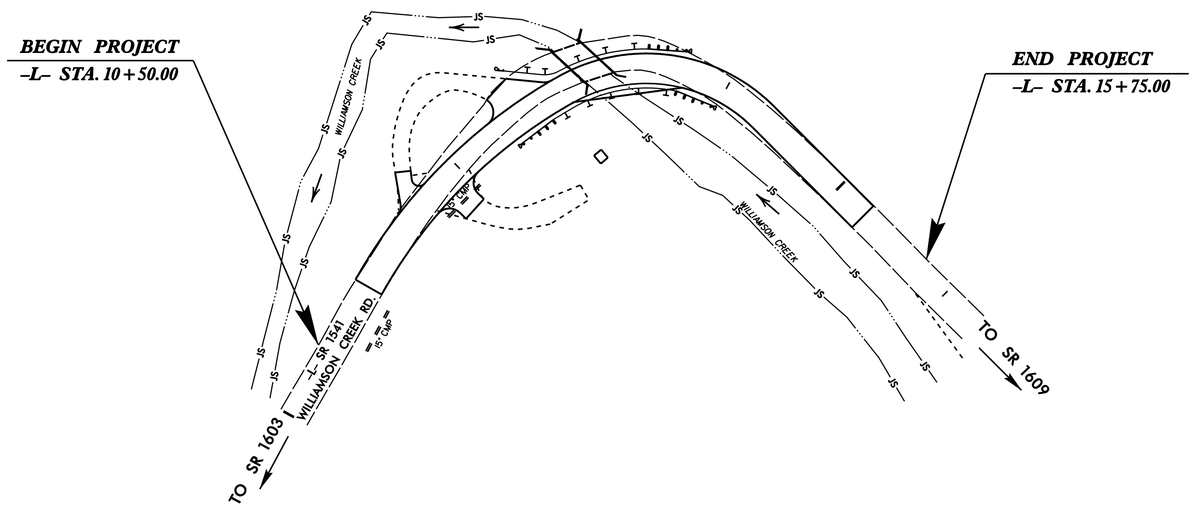
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

TRANSYLVANIA COUNTY



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

_____ STATE TRAFFIC MANAGEMENT ENGINEER

_____ TRAFFIC CONTROL PROJECT ENGINEER

_____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER

_____ TRAFFIC CONTROL DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

INDEX OF SHEETS

Prepared In the Office of:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: DocuSigned by: Tim Arey 1C098E1DD663498...
DATE: 7/17/2015

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

SHEET NO.
TMP-1

WBS ELEMENT:
17BP.14.R.123

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.123	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- TEMPORARY PAVEMENT WEDGING

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM / SKINNY DRUM / TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: DocuSigned by: Tom Day DATE: 7/17/2015

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM ARE

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.123	TMP-1B

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 100 ft IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

H) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

PROJECT NOTES & PHASING

SIGNING

I) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

K) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 ft IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

L) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

M) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

N) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

O) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PHASING

PHASE I

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01.

STEP 2: INSTALL A PORTABLE TRAFFIC SIGNAL SYSTEM TO OPERATE THE ONE-LANE, TWO-WAY TEMPORARY PATTERN ALONG -L- AS SHOWN ON PHASE I DETAIL, SHEET TMP-3.

STEP 3: ACTIVATE THE PORTABLE TRAFFIC SIGNAL SYSTEM AND INSTALL PORTABLE CONCRETE BARRIER AND SHORING AS SHOWN ON PHASE I DETAIL, SHEET TMP-3.

STEP 4: REMOVE PART OF THE EXISTING BRIDGE, AS SHOWN IN THE STRUCTURE PLANS, CONSTRUCT -L- WIDENING AND STAGE I OF THE PROPOSED -L- CULVERT FOR THE LIMITS SHOWN ON THE PHASE I DETAIL, SHEET TMP-3, UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE.

PHASE II

STEP 1: SHIFT -L- TRAFFIC ONTO THE NEWLY CONSTRUCTED SECTION OF THE PROPOSED -L- CULVERT AND ROADWAY IN A ONE-LANE, TWO-WAY PATTERN USING THE PORTABLE TRAFFIC SIGNAL SYSTEM AS SHOWN ON THE PHASE II DETAIL, SHEET TMP-3.

STEP 2: INSTALL ANCHORED PORTABLE CONCRETE BARRIER AS SHOWN ON THE PHASE II DETAIL, SHEET TMP-3.

STEP 3: REMOVE REMAINING SECTION OF THE EXISTING -L- BRIDGE AND CONSTRUCT REMAINDER OF THE PROPOSED -L- CULVERT AND APPROACHES BEHIND PORTABLE CONCRETE BARRIER AS SHOWN ON THE PHASE II DETAIL, SHEET TMP-3.

STEP 4: REMOVE ALL TRAFFIC CONTROL DEVICES, PLACE THE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS AND OPEN -L- TO THE FINAL TRAFFIC PATTERN.

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Digitally signed by Tom Day, Transportation Mobility and Safety Division — DATE: 7/17/2015

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM ARE

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

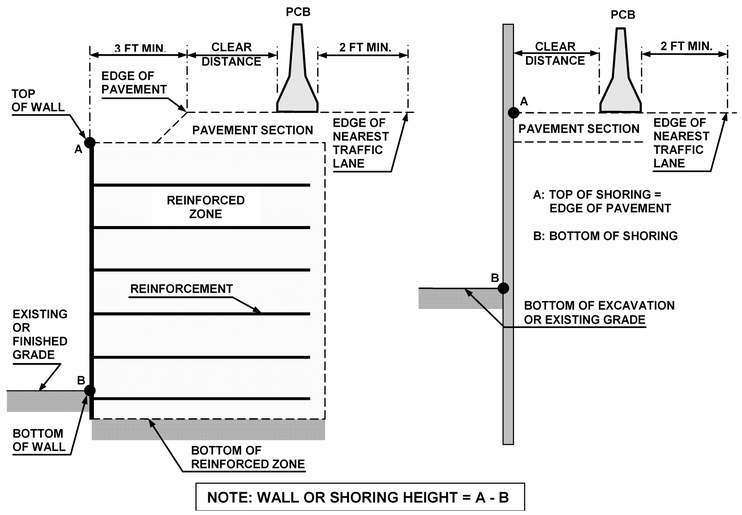


FIGURE A

NOTES

1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.

2- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).

3- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.

4- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.

5- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.

6- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.

7- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.

8- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.

9- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

MINIMUM REQUIRED CLEAR DISTANCE, inches

Barrier Type	Pavement Type	Offset * ft	Design Speed, mph					
			<30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
		>56	32	36	42	45	47	51
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
		50-56	26	26	28	32	35	38
		>56	26	27	29	32	36	38
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

*** See Figure Below**

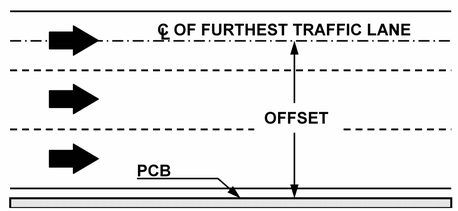


FIGURE B

PLAN PREPARED IN THE OFFICE OF:
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APPROVED: DocuSigned by: Tom Cheney 7/17/2015
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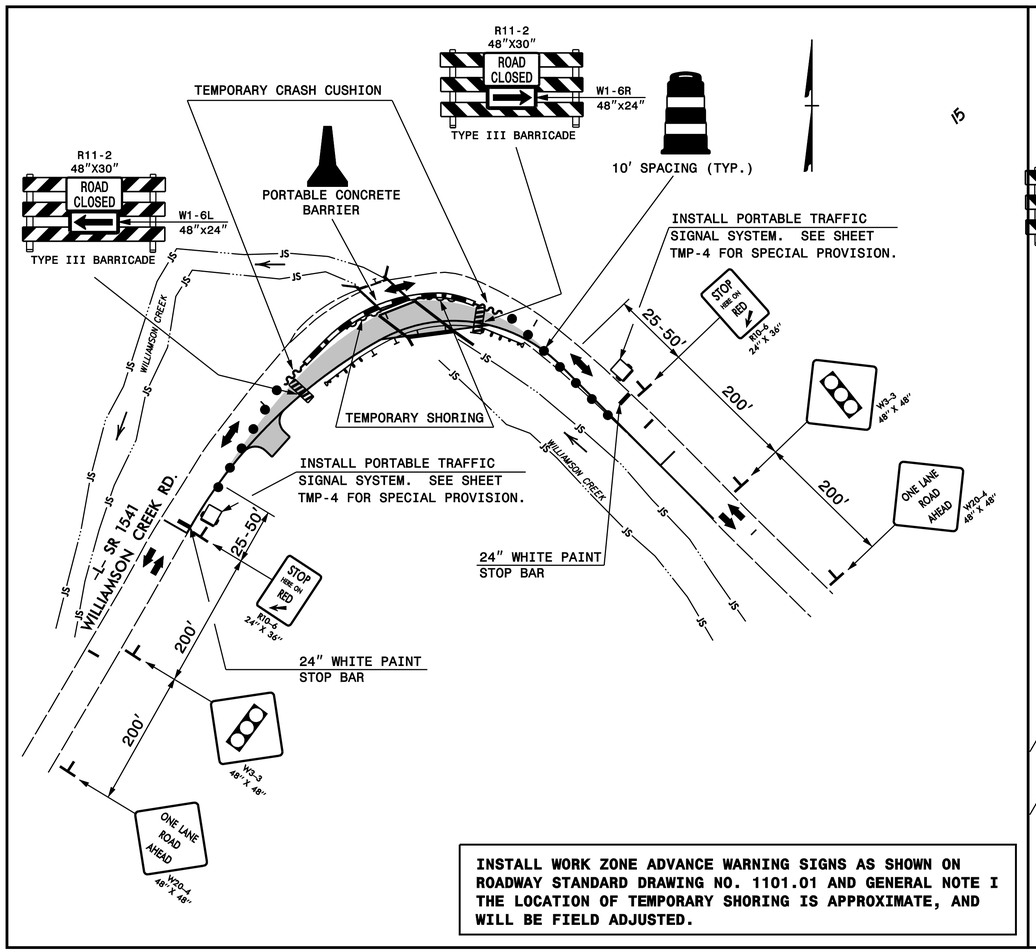
DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN
PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

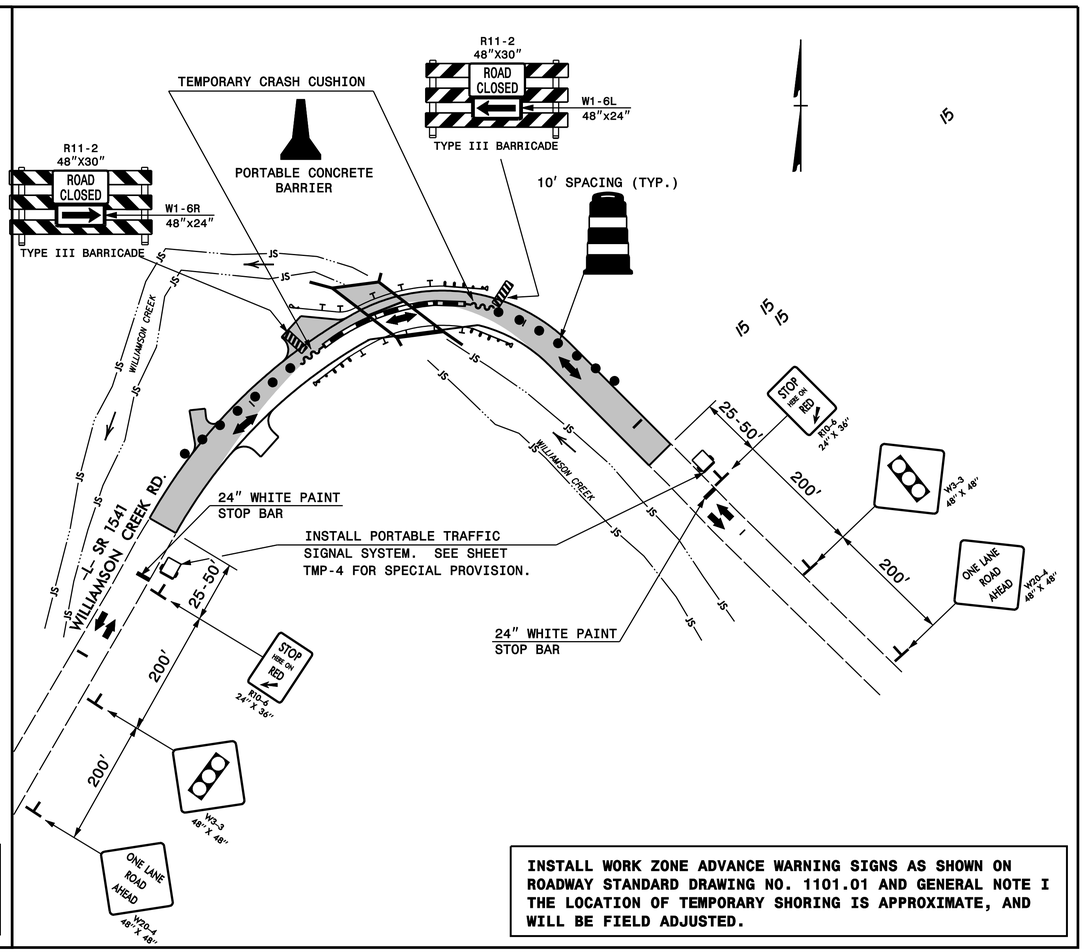
PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.123	TMP-3

PHASE I DETAIL



INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01 AND GENERAL NOTE I THE LOCATION OF TEMPORARY SHORING IS APPROXIMATE, AND WILL BE FIELD ADJUSTED.

PHASE II DETAIL



INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01 AND GENERAL NOTE I THE LOCATION OF TEMPORARY SHORING IS APPROXIMATE, AND WILL BE FIELD ADJUSTED.

PLAN PREPARED IN THE OFFICE OF:

PROGRESSIVE DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS

APPROVED: Digitally Signed by Tim Arey DocuSigned by: 7/17/2015 DATE:

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DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN DETAIL SHEET

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.123	TMP-4

PORTABLE TRAFFIC SIGNAL SYSTEM SPECIAL PROVISION

13. PORTABLE TRAFFIC SIGNAL SYSTEM

13.1. DESCRIPTION

Furnish, install, place in operation, repair, maintain, relocate, and remove portable traffic signal systems. Comply with the provisions of Section 1700 of the 2012 *Standard Specifications for Roads and Structures.*

13.2. MATERIALS

Provide a complete portable traffic signal system that is totally mobile and capable of being relocated as traffic conditions demand. Design the system for operation both with and without an external power source. Furnish two signal control trailers with two vehicle signal heads per trailer and one operator unit for each portable traffic signal system. Furnish transmitters, generators, batteries, controls, back-up systems and all other components necessary to operate the system.

Ensure each system meets the physical display and operational requirements of conventional traffic signals as specified in PART IV of the *Manual on Uniform Traffic Control Devices (MUTCD)* and the *North Carolina Supplement to the MUTCD* in effect on the date of advertisement.

Used equipment will be acceptable if the equipment is in good working condition. Contractor retains ownership of the portable traffic signal systems.

Provide yellow 12-inch aluminum or polycarbonate vehicle signal heads with 10-inch tunnel visors, backplates and Light Emitting Diode (LED) modules. Provide aluminum signal heads and backplates listed on the Department's Qualified Products List (QPL) for traffic signal equipment. Provide polycarbonate signal heads and visors that comply with the provisions pertaining to Signal Heads within these *Project Special Provisions* with the following exceptions:

Fabricate signal head housings, end caps, and visors from virgin polycarbonate material. Provide U.V. stabilized polycarbonate plastic with a minimum thickness of 0.1 ± 0.01 inches that is highway yellow (Federal Standard 595C, Color Chip 13538). Ensure the color is incorporated into the plastic material before molding the signal head housings and end caps. Ensure the plastic formulation provides the following physical properties in the assembly (tests may be performed on separately molded specimens):

Test	Required	Method
Specific Gravity	1.17 minimum	ASTM D 792
Vicat Softening Temperature, °F	305-325	ASTM D 1525
Brittleness Temperature, °F	Below –200	ASTM D 746
Flammability	Self-extinguishing	ASTM D 635
Tensile Strength, yield, PSI	8500 minimum	ASTM D 638
Elongation at yield, %	5.5-8.5	ASTM D 638
Shear, strength, yield, PSI	5500 minimum	ASTM D 732
Izod impact strength, ft-lb/in [notched, 1/8 inch]	15 minimum	ASTM D 256
Fatigue strength, PSI at 2.5 mm cycles	950 minimum	ASTM D 671

To minimize signal head movement due to wind, mount top and bottom of signal heads to the signal head supports.

Provide 120V AC powered LED modules listed on the QPL, or provide 12V DC powered LED modules that meet the *ITE VTCSH Part 2: Light Emitting Diode (LED) Vehicle Signal Modules (Interim Purchase Specification)* with the exception of paragraphs 5.2, 5.3, 5.7, and testing associated with 120V AC. Ensure DC powered LED modules operate with input power between 9V DC and 15V DC.

Provide trailers that have durable paint in highway orange, Federal Standard 595C Color Chip ID # 12473 with a minimum paint thickness of 2.5 mils.

Provide trailers with a 12-volt trailer lighting system complying with *Federal Motor Carrier Safety Regulations 393*, safety chains, and a 2-inch ball hitch. When provided, locate generators, fuel tanks, batteries and electronic controls in protective housings that are provided with locks to restrict access.

Design the trailer assembly and signal supports to withstand an 80 MPH wind load with the signal supports raised in the operating position. Provide independent certification from a registered Professional Engineer that the assembly meets this 80 MPH wind load requirement. Provide a reliable hydraulic, electric or manual means for raising and lowering the signal support members. Provide screw-type stabilizing and leveling devices with a self-leveling foot to support the unit in the operating position on slopes 1V:3H or flatter when detached from the transporting vehicle.

During manual operation, ensure the system provides a means of informing the operator of signal indications, such as a light on the back of each signal head that illuminates when the signal displays a red indication.

Design the portable traffic signal system to perform without interruption during the time it is in operation.

Where a traffic actuated system is required, provide a system control unit that is capable of pre-timed operation, traffic actuated operation, a variable green time interval dependent upon vehicle actuations, and programmable yellow clearance and red clearance intervals. Furnish all sensors to monitor vehicle demands for vehicle actuation per the Project Special Provisions and Section 1098 of the Standard Specifications.

Design the systems to be fail-safe. Ensure the system monitors the following conditions: lack of green, yellow, and red signal indication voltage, total loss of indication on any approach, presence of multiple signal indications on any approach, conflicting green/yellow signal indications, and low power condition. In the event any of these conditions are detected, immediately begin flashing operation of red indications in all directions.

Provide either hard-wired, microwave, or radio controlled type communications for pre-timed and traffic actuated portable traffic signal systems. In the event a loss of communication is detected, immediately begin flashing operation of red indications in all directions.

Ensure systems that use wireless communication links continuously monitor and verify proper transmission and reception of data used to monitor and control each signal head. Ensure ambient mobile or other radio transmissions or adverse weather conditions do not affect the system. Encode signal transmissions digitally to protect radio transmissions from interference. Do not violate FCC regulations and ensure radio frequencies are appropriate for portable signal equipment applications.

Upon detecting a malfunction, ensure all signals go to a flashing red condition and the operator is notified by a reliable means approved by the Engineer. Provide a battery back-up system for generator and direct current powered signal systems to power the warning means and "flashing red" condition. Provide a back-up system with a 72-hour minimum reserve.

Ensure the system meets the Environmental Standards for traffic signals in accordance with NEMA TS-1, Section 2.

13.3. CONSTRUCTION METHODS

Do not use portable traffic signal systems in a work area with intersecting streets or driveways, unless directed by the Engineer.

Do not install portable traffic signal within 300 feet of at-grade railroad crossing.

During automatic operation, ensure the motorist has an unobstructed view of opposing traffic.

Ensure the distance between signal units does not exceed 500 feet unless otherwise shown on the plans or directed by the Engineer. If modification to the distance between signal units is required after the units are positioned, relocate the signals or the system and make the necessary timing revisions only as directed by the Engineer.

Submit a traffic signal timing plan to the Engineer for approval a minimum of two weeks prior to installation. Include the following items in the plan: distance between stop bars, speed limit to be posted during operation, each approach grade, recommended yellow change interval, recommended red clearance interval, recommended minimum and maximum green intervals. Make timing changes to approved signal timing plan only as authorized by the Engineer. Keep a written record of all timing changes.

Allow only trained operators to set up and operate the system. Provide an experienced operator at all times for each portable traffic signal system during periods of manual operation. Do not violate yellow change and red clearance intervals during periods of manual operation. During manual operation, ensure the operator has an unobstructed view of the motorists and all signal head units. Locate the operator as close to the center of the operation as possible.

Perform all maintenance operations required by the system manufacturer including periodic cleaning of the systems. Ensure properly skilled and trained maintenance personnel are available to maintain the system in good working order and to perform all emergency and preventive maintenance as recommended by the system manufacturer.

Furnish the Engineer with the name, office telephone number, cellular (mobile) telephone number, and pager number of the supervisory employee who will be responsible for maintenance and repair of equipment during all hours.

For all failures, malfunctions, or damage to this equipment, begin necessary repairs within four hours of notification. Complete repairs within eight hours of notification. Comply with Section 150 for maintenance of traffic flow. The inability to contact the supervisory employee or prearranged alternate will not extend repair time requirements.

In the event that the system becomes inoperative, be prepared at all times to revert to flagging operations or suspend all construction activities requiring the use of the portable traffic signal system until the system is restored to proper operation. Implement flagging operations as shown on 2012 Roadway Standard Drawing No. 1101.02 Sheet 1 (Closure of one lane of a Two-lane, Two-way Highway).

When not in operation, remove signal heads from the view of traffic or cover signal heads with burlap bags or bags made of non-ripping material specifically designed for covering signal heads. Do not use trash bags of any type. Remove, cover, fold, or turn all inappropriate signs so that they are not readable by oncoming traffic.

13.4. MEASUREMENT AND PAYMENT

Actual number of portable traffic signal systems furnished, installed, operated, removed, and accepted.

No measurement will be made for operation, relocation, maintenance, removal of each system, or use of flaggers during repair periods as these will be considered incidental to furnishing, installing, and operating the portable traffic signal systems.

No measurement will be made for signal controller, communication cable, messenger cable, wireless communication, inductive loop sawcut, loop emulator detection system, machine vision detection system, microwave detection system, detector channel/unit, detector lead-in cable, trenching, vehicle signal heads, signal head support assemblies, signal cable, and traffic signal software as these will be considered incidental to furnishing, installing, and operating the portable traffic signal systems.

Payment will be made under:

Portable Traffic Signal System (actuated) ..... Each
Portable Traffic Signal System (pre-timed) ..... Each

PLAN PREPARED IN THE OFFICE OF:
PROGRESSIVE DESIGN GROUP, INC.
ENGINEERS • CONSULTANTS

APPROVED: Digitally Signed by: Tom Airey DATE: 7/17/2015
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 025465 ENGINEER TIM AREY

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

TRANSPORTATION MANAGEMENT PLAN SPECIAL PROVISION

09/08/99

WBS: 17BP.14.R.123

CONTRACT: DN00291

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
TRANSYLVANIA COUNTY

LOCATION: BRIDGE NO. 127 OVER WILLIAMSON CREEK ON SR 1541 (WILLIAMSON CREEK RD.)

WBS	SHEET NO.
17BP.14.R.123	PMP-1

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040878 JARED M. BOND

DocuSigned by: 10/16/2015

RS&H

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR AS DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1541	PAINT	N/A

PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

E) ALL EXISTING SIGNS ON WOOD & U POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.

PAVEMENT MARKING SCHEDULE
BRIDGE NO. 870127

FINAL
PAVEMENT MARKINGS

PA	WHITE EDGELINE	PAINT (4")
PI	YELLOW DOUBLE CENTER	PAINT (4")

PLAN PREPARED BY: RS&H ARCHITECT-ENGINEERS-PLANNERS, INC.

JENNIFER FARINO, PE — PROJECT ENGINEER

JARED BOND, PE — PROJECT DESIGN ENGINEER

INDEX

10/14/2015
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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.123	PMP-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

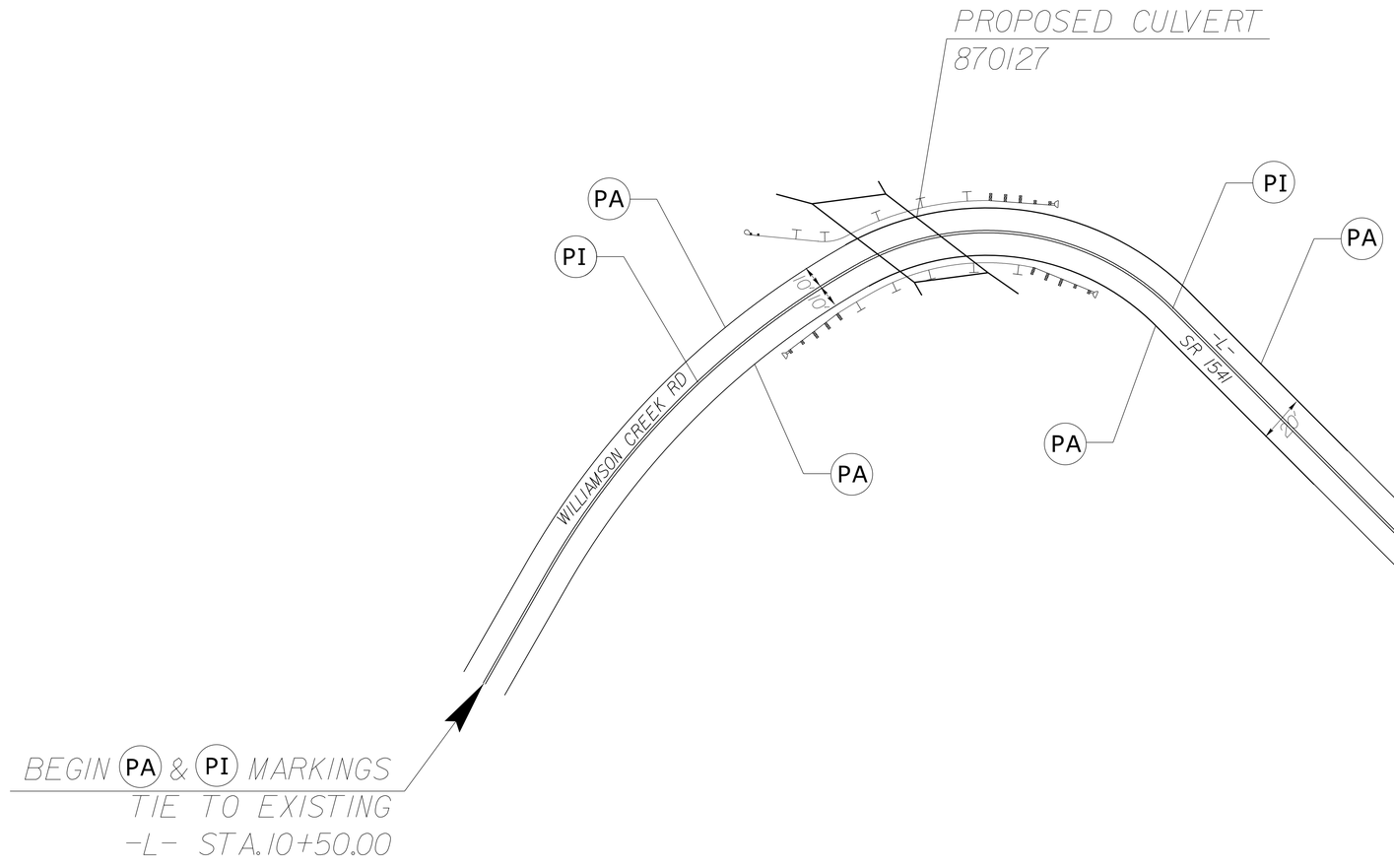
NORTH CAROLINA PROFESSIONAL SEAL 040048 ENGINEER JARED M. BOND

DocuSigned by: Jared Bond

10/16/2015

RS&H

SYMBOL AND PAVEMENT MARKING LEGEND	
(PA)	WHITE EDGE LINE (4")
(PI)	YELLOW DOUBLE CENTER (4")



PAVEMENT MARKING DETAIL

10/14/2015
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WBS ELEMENT: 17BP.14.R.123

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.123	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.123	N/A	PE
17BP.14.R.123	N/A	ROW, UTL
17BP.14.R.123	N/A	CONST

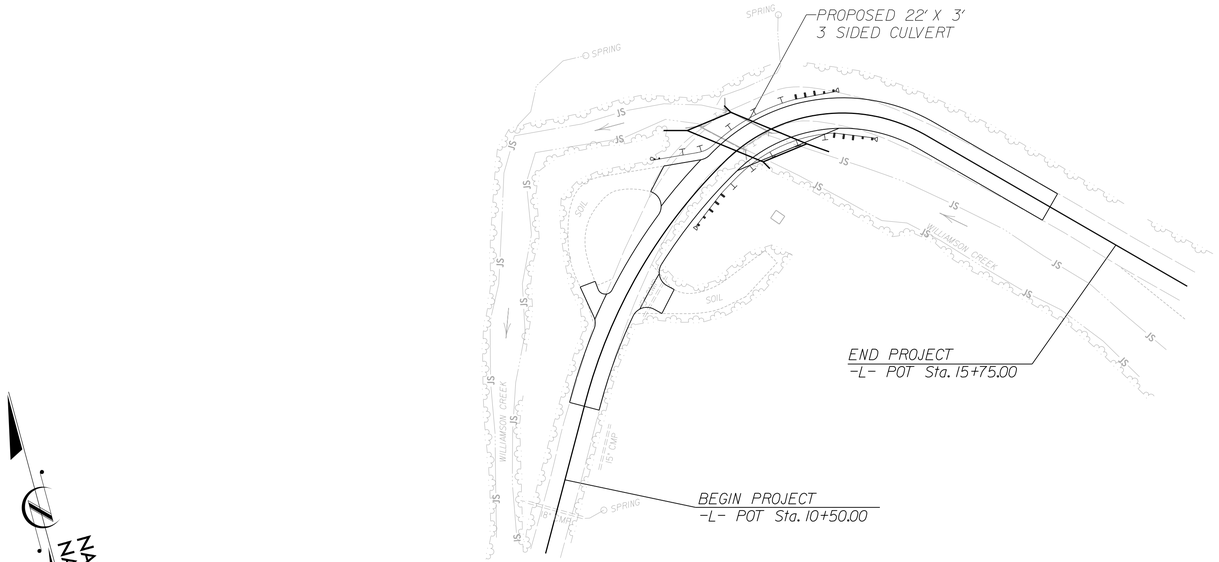
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

TRANSYLVANIA COUNTY

LOCATION: BRIDGE NO. 127 OVER WILLIAMSON CREEK ON SR 1541 (WILLIAMSON CREEK ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone Exist
From Sta. 10+50
to Sta. 15+75
Refer To E. C. Special Provisions for Special Considerations.

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

GRAPHIC SCALE

25 0 50

PLANS

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:

RS&H

1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
704-752-0610

WILL WEATHERSBEE
LEVEL IIIA NAME

3161
LEVEL IIIA CERTIFICATION NO.

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

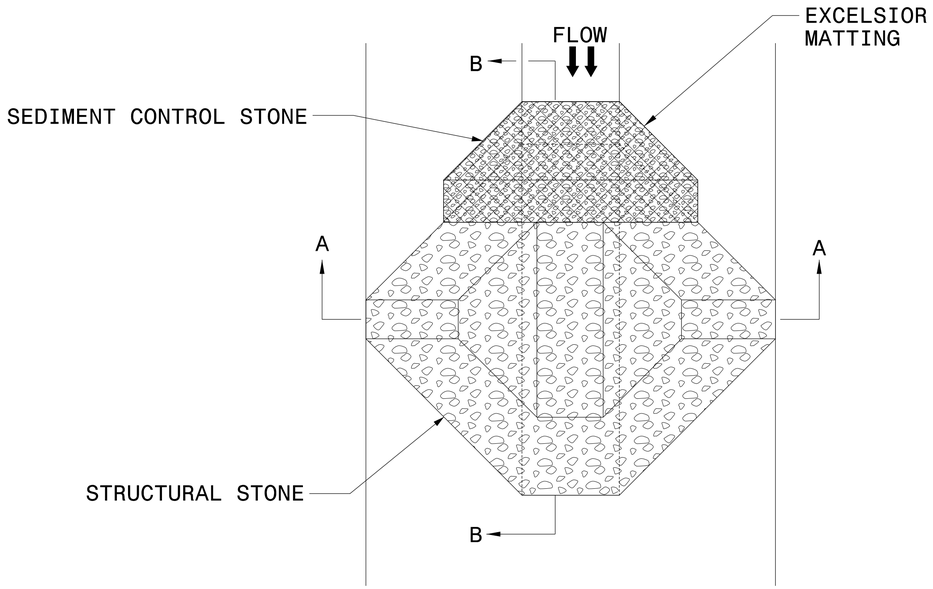
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.R.J23	EC-2

RS&H

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

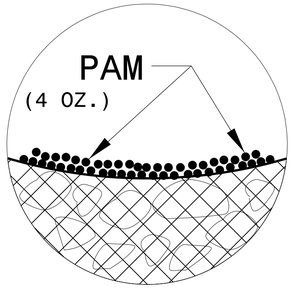
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

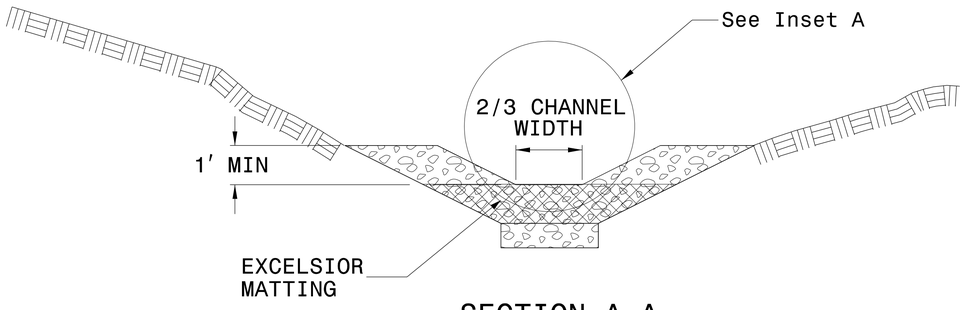
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

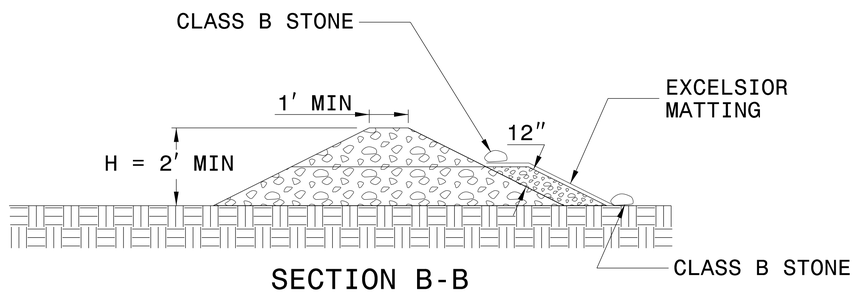
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.123	EC-3

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

RS&H

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.123	EC-4/CONST.4

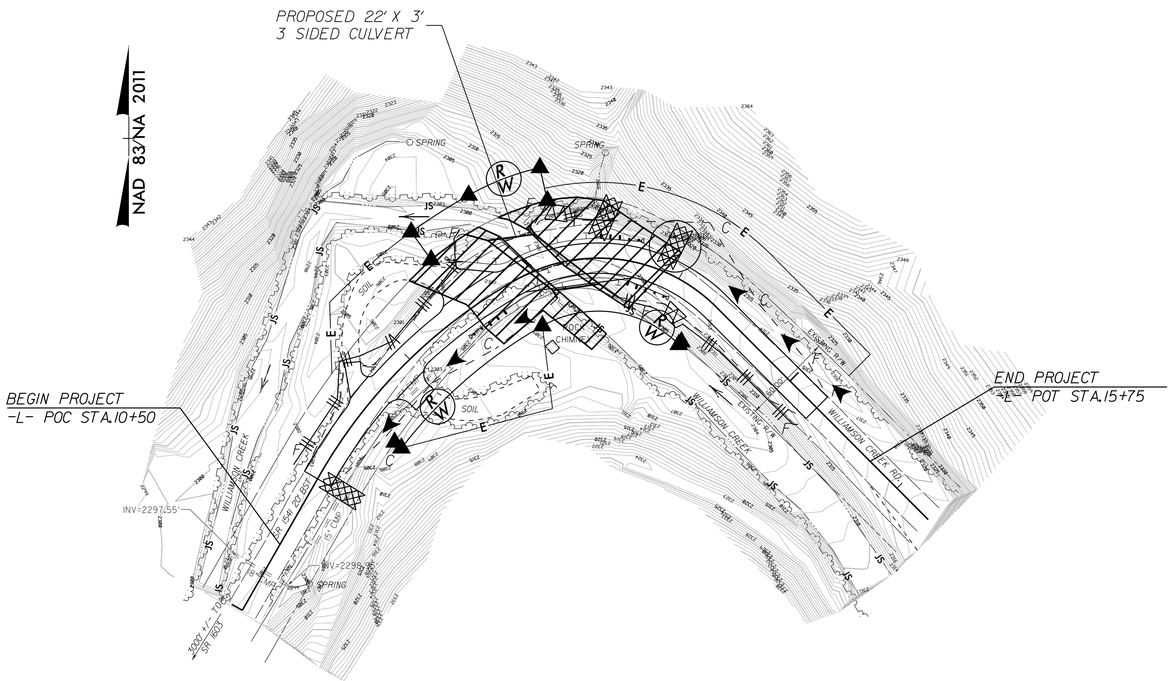
RS&H

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

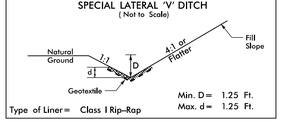
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

NOTE:
EXCELSIOR OR OTHER MESH TYPE NETTING IS NOT ALLOWED IN OR ON STREAM BANKS



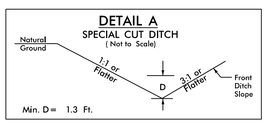
DETAIL B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner = Class I Rip–Rap
Min. D = 1.25 Ft.
Max. d = 1.25 Ft.

FROM STA. 13+06 TO STA. 13+50

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 1.3 Ft.

FROM –L– STA. 13+50 TO STA. 15+00 (LT)
FROM –L– STA. 11+00 TO STA. 13+00 (RT)

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone Exist
From Sta. 10+50
to Sta. 15+75
Refer To E. C. Special Provisions for Special Considerations.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.123	EC-5/CONST.4

RS&H

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.
NOTE: UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.
NOTE: EXCELSIOR OR OTHER MESH TYPE NETTING IS NOT ALLOWED IN OR ON STREAM BANKS

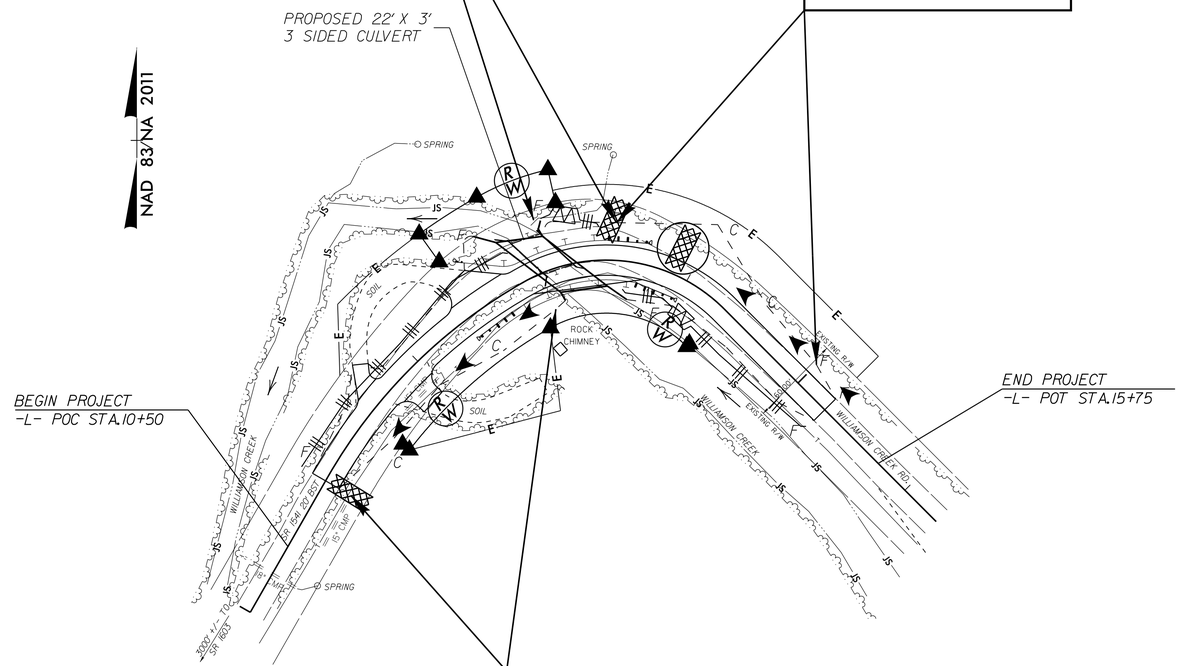
–L– STA. 13+50 to –L– STA. 13+06 LT

INSTALL 24 TONS CLASS 1 RIP–RAP IN THE PROPOSED DITCH LINE.

–L– STA. 15+25 to –L– STA. 13+50 LT

INSTALL 175 SY MATTING IN THE PROPOSED DITCH LINE.

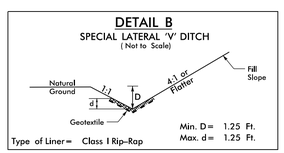
NAD 83/NA 2011



INSTALL 170 SY MATTING IN THE PROPOSED DITCH LINE.

–L– STA. 13+00 to –L– STA. 11+00 RT

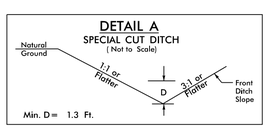
DETAIL B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= Class I Rip–Rap
Min. D= 1.25 Ft.
Max. d= 1.25 Ft.

FROM STA. 13+06 TO STA. 13+50

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.3 Ft.

FROM –L– STA. 13+50 TO STA. 15+00 (LT)
FROM –L– STA. 11+00 TO STA. 13+00 (RT)

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone Exist
From Sta. 10+50
to Sta. 15+75
Refer To E. C. Special Provisions for Special Considerations.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

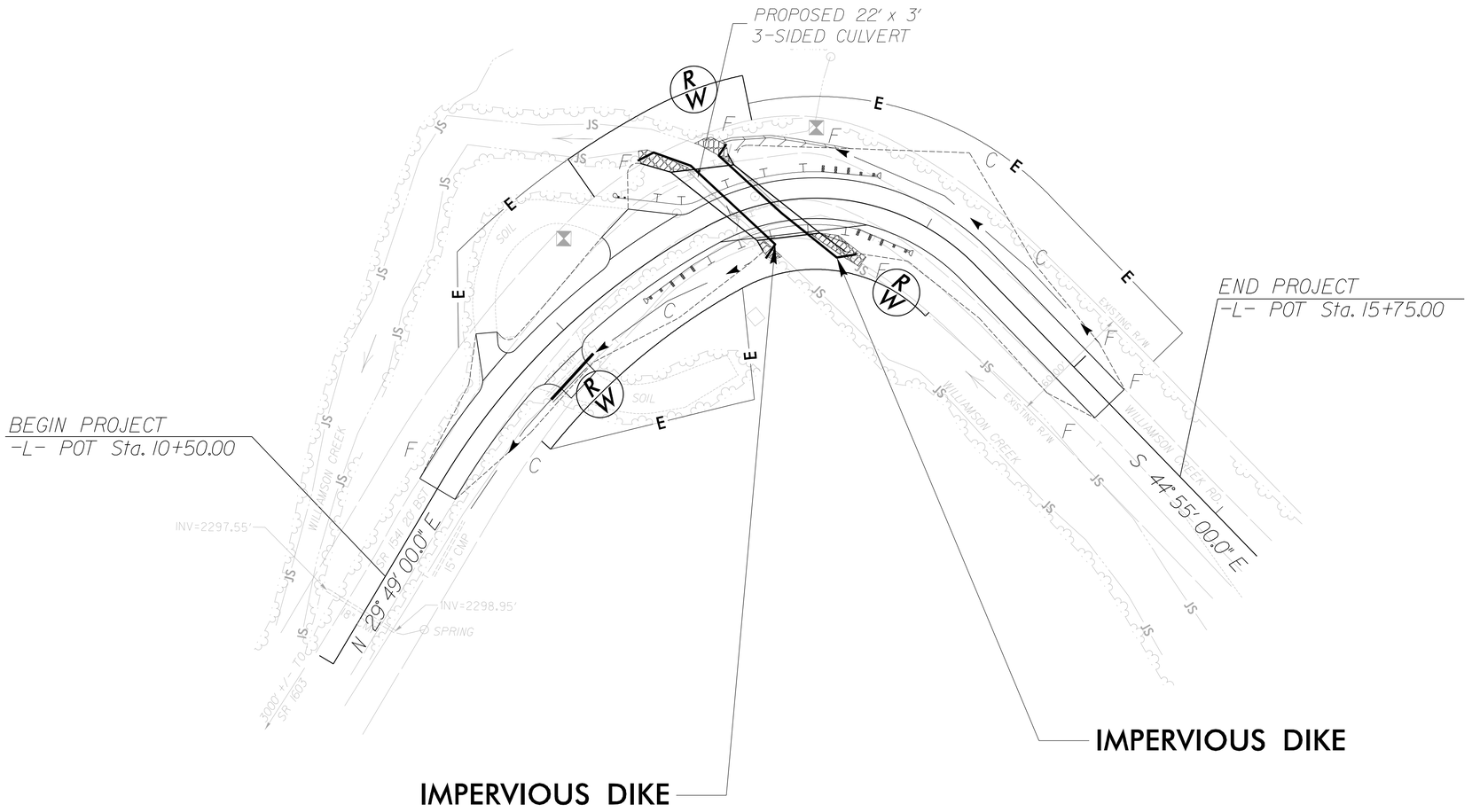
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.123	EC-6/CONST.4

RS&H

CULVERT CONSTRUCTION SEQUENCE –L– STA. 13+12

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. CONSTRUCT IMPERVIOUS DIKES DIVERTING FLOW THROUGH THE CENTER OF THE 3 SIDED CULVERT.
3. REMOVE EXISTING BRIDGE AND CONSTRUCT PROPOSED CULVERT.
4. REMOVE IMPERVIOUS DIKES AND COMPLETE INLET\OUTLET CHANNEL IMPROVEMENTS.
5. COMPLETE ROADWAY.

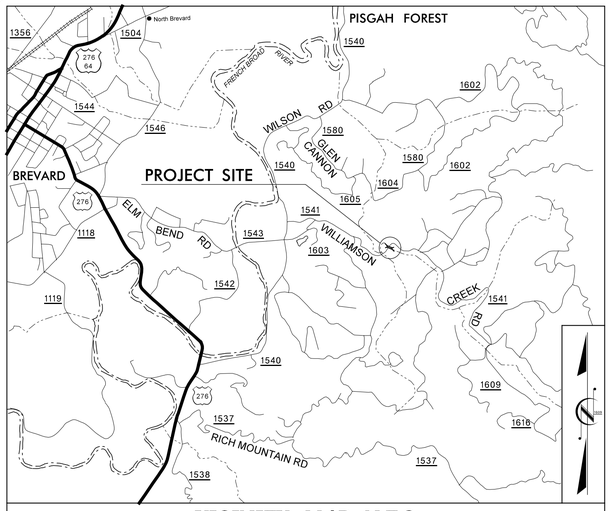


NTS

8/30/17

WBS ELEMENT: 17BP.14.R.123

CONTRACT: DN00291



VICINITY MAP N.T.S.

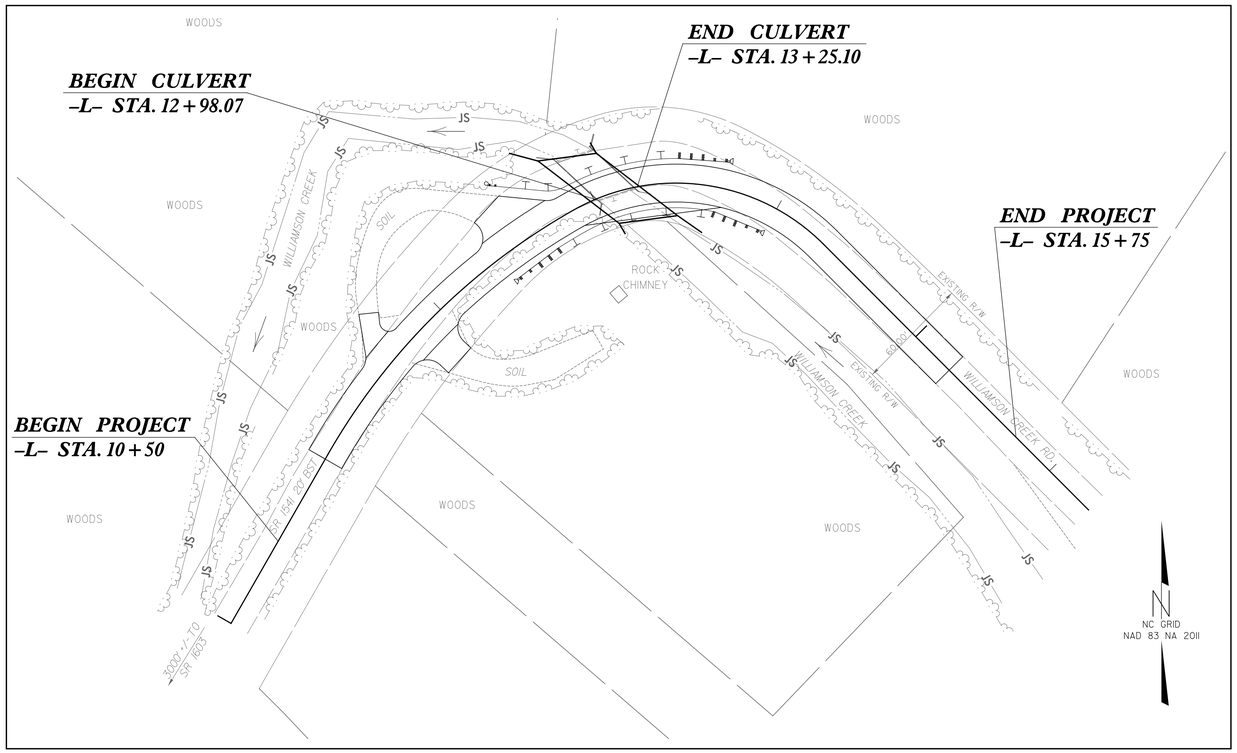
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
TRANSYLVANIA COUNTY

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.123	UO–1

LOCATION: BRIDGE NO. 127 OVER WILLIAMSON CREEK ON SR 1541 (WILLIAMSON CREEK ROAD)

TYPE OF WORK: AERIAL POWER, TELEPHONE & CATV, BURIED TELEPHONE



V&M Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Charlotte, NC 704-357-0488
Boone, NC 828-355-9933
Atlanta, GA 770-627-3509

GRAPHIC SCALES

30 15 0 30 60
PLANS

INDEX OF SHEETS

SHEET NO.	*DESCRIPTION*
UO–1	*TITLE SHEET*
UO–2	*UTILITIES BY OTHERS PLAN SHEET*

UTILITY OWNERS ON PROJECT

(1) POWER – DUKE ENERGY

(2) TELEPHONE & CATV – COMPORIUM (CITIZENS TELEPHONE COMPANY)

PLANS PREPARED BY:

V&M Vaughn & Melton
Consulting Engineers
1318-F PATTON AVE.
Asheville, NC 28806
828-253-2796

PREPARED FOR THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES ENGINEERING SECTION
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

Robert Golding — *DIVISION UTILITY COORDINATOR*

Lynn A. Mann, P.G. — *UTILITIES PROJECT DESIGNER*

V&M PROJECT #31430-02
TRANSPORTATION\31430-02\TRANS 127\UTILITIES\UO-1.DGN

8/30/17

WBS ELEMENT: 17BP.14.R.123

CONTRACT: DN00291

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.123	U0-2

UTILITIES BY OTHERS

NC GRID
NAD 83 NA 2011

4
LEAH R. BELEW
DB 596 PG 145

REMOVE DUKE ENERGY & COMPORIUM AERIAL LINES

BEGIN CULVERT
–L– POC STA. 12+98.07
PROPOSED 54'X 22'X 3'
3 SIDED CULVERT

SPECIAL LATERAL 'V' DITCH
SEE DETAIL B

3
ALEX A. RITCHEY
DB 312 PG 233

REMOVE EXIST. COMPORIUM POLE

END CULVERT
–L– POC STA. 13+25.10

REMOVE AERIAL TELEPHONE LINES

NEW COMPORIUM PERMANENT POLE

SPECIAL CUT DITCH
SEE DETAIL A

REMOVE COMPORIUM PEDESTAL & POLE

REMOVE DUKE ENERGY POLE & ANCHOR

REMOVE AERIAL LINES

RELOCATE BURIED TELEPHONE AND FO BEHIND DITCH

WILLIAM D. CLARKE, III
DB 257 PG 476

RUSSELL J. MERRILL, ET AL
DB 471PG 680

DO NOT DISTURB ROCK CHIMNEY

NEWLY CONSTRUCTED (JANUARY 2015) DUKE ENERGY POLE AND ANCHOR, LOCATION APPROXIMATE, PROPOSED END OF AERIAL POWER LINE

RELOCATE & REUSE EXISTING 15" CMP*

NEW COMPORIUM PERMANENT POLE, ANCHOR AND PEDESTAL, RELOCATE BURIED LINES TO NEW PEDESTAL

SPECIAL CUT DITCH
SEE DETAIL A

END PROJECT
–L– STA. 15+75

BEGIN PROJECT
–L– STA. 10+50

CATV WILL END PRIOR TO CONSTRUCTION LIMITS OF THIS PROJECT

1
HELFRIED PAA
DB 367 PG 621

2
EDWARD L. BRYSON, JR.
DB 207 PG 186

LYNNE M. MATTOS
DB 383 PG 232

WOODS, SPRING, JS, E, OH P, OH CATV, OH T & FO, UG T & FO, PROP O/H FO & TEL LINES, PROP U/G (FO) TEL CABLE, EXISTING R/W, WILLIAMSON CREEK, ROCK CHIMNEY, METER POLE, SOIL, SR 1541 20' BST, 15" CMP, 3000'+/- TO SR 1603

Vaughn & Melton
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V&M PROJECT #31430-02
TRANSPORTATION\31430-02\TRANS 127\UTILITIES\U0-2.DGN